

CLAIMS

We claim:

1. A composition comprising a blend of at least a first polymer component and
5 a second polymer component, said blend comprising:
greater than 2% by weight of said first polymer component
comprising isotactic polypropylene, and
a second polymer component comprising a copolymer of propylene and at
least one other alpha-olefin having less than 6 carbon atoms, said
10 copolymer comprising crystallizable propylene sequence and at least
75% by weight propylene.
2. The composition of claim 1 wherein the first polymer component further
comprises a comonomer.
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3. The composition of claim 1 wherein the first polymer component is
predominately crystalline with a melting point by DSC equal to or above 115° C.
4. The composition of claim 1 wherein the alpha-olefin of the second polymer
20 component comprises ethylene.
5. The composition of claim 1 wherein the second polymer component is
comprised of about 5% to about 25% by weight alpha-olefin.
- 25 6. The composition of claim 5 wherein the alpha-olefin of the second polymer
component comprises ethylene.

7. The composition of claim 1 wherein the second polymer component is comprised of from about 6% to about 18% by weight ethylene.

5 8. The composition of claim 1 wherein the crystallizable propylene sequences comprise isotactic propylene sequences.

9. The composition of claim 1 wherein the first polymer component has a melting point equal to or greater than about 130°C and the second polymer component has a melting point equal to or less than about 105°C.

10 10. The composition of claim 9 wherein the resultant blend has a glass transition temperature closer to that of the second polymer component and lower than the glass transition temperature of the first polymer component.

15 11. The composition of claim 1 wherein the second polymer component has a molecular weight distribution of about 2.0 to about 3.2.

12. The composition of claim 1 wherein the second polymer component has a melting point by DSC between about 30 C and about 100 C.

20 13. A thermoplastic polymer blend composition comprising:
from about 2% to about 95% by weight of a first thermoplastic polymer
component comprising isotactic polypropylene, and
from about 5% to about 98% by weight of a second thermoplastic
25 polymer component comprising a random copolymer of ethylene
and propylene having a melting point by DSC between about 30 C
and about 100 C, said copolymer comprising crystallizable

propylene sequences and up to about 25% by weight ethylene.

14. The compositions of claim 13 wherein said first thermoplastic polymer component further comprises a propylene - alpha-olefin copolymer.

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15. The composition of claim 13 wherein the second thermoplastic polymer component comprises from about 6% to about 18% ethylene.

10 16. The composition of claim 13 wherein the blend composition has a glass transition temperature closer to that of the second polymer component and lower than the glass transition temperature of the first polymer component.

17. The composition of claim 13 wherein the second thermoplastic polymer component has a molecular weight distribution of about 2.0 to about 3.2.

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18. A thermoplastic polymer blend composition comprising:

a) from about 2% to about 95% by weight of a first thermoplastic polymer component selected from the group comprising isotactic polypropylene and propylene alpha-olefin copolymer and

20 b) a second polymer composition comprising a blend of two propylene alpha-olefin copolymers. Wherein in one of said copolymers lies an alpha-olefin content of from 5% to 9% by weight and the other copolymer has an alpha-olefin content of from 10 wt% to 22 wt%.

25 19. The thermoplastic polymer blend of claim 18 where the alpha-olefin in the second polymer component is ethylene.

20. A process for preparing a thermoplastic polymer blend composition comprising:

- a. polymerizing propylene or a mixture of propylene and one or more monomers selected from a group consisting of C₂ or C₄ - C₁₀ alpha olefins in the presence of a polymerization catalyst wherein a substantially isotactic propylene polymer containing at least about 90% by weight polymerized propylene is obtained;
- b. polymerizing a mixture of ethylene and propylene, wherein a copolymer of ethylene and propylene is obtained comprising up to about 25% by weight ethylene and containing isotactically crystallizable propylene sequences; and
- c. blending the propylene polymer of step (a) with the copolymer of step (b) to form a blend.

15 21. The process of claim 18 wherein the isotactic propylene polymer has melting point greater than 130°C.

22. The process of claim 18 wherein the copolymer comprises from about 6% to about 18% by weight ethylene.

20 23. The process of claim 18 wherein the copolymer has a melting point by DSC between about 30° C and about 100° C.

25 24. The resultant blend of the process of claim 18 wherein the blend has a glass transition temperature closer to that of the second polymer component and lower than the glass transition temperature of the first polymer component.

25. The process of claim 18 wherein the copolymer of ethylene and propylene is a random copolymer having a molecular weight distribution of about 2.0 to about 3.2.
- 5 26. The process of claim 18 wherein the ethylene and propylene are polymerized in the presence of the isotactic propylene polymer composition of step
 (a) in a reactor wherein a reactor blend is formed.
- 10 27. The process of claim 18 wherein the ethylene and propylene are polymerized in the presence of a metallocene catalyst.
28. The process of claim 18 wherein the propylene is polymerized in the presence of a metallocene or a Ziegler-Natta catalyst.
- 15 29. The process of claim 18 wherein from about 2% to about 95% by weight isotactic propylene polymer is blended with about 5% to about 98% by weight copolymer of ethylene and propylene.
- 20 30. The thermoplastic polymer blend composition produced by the process of claim 18.